

B1  
contd.

150. The kit of claim 149 wherein the translational mechanism is an electro-mechanical mechanism having greater than 1  $\mu\text{m}$  repeatability relative to reaction region diameter travel distance.

151. The kit of claim 127 wherein the dispenser is adjusted to repeatedly dispense droplets no greater than 5 nl to the same or a different localized area.

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### REMARKS

Prior to examination on the merits, applicants respectfully request entry and consideration of the above amendments and newly submitted claims. Applicants' newly submitted claims 48-151 are supported by the specification and accordingly, do not constitute new matter.

The subject matter of claim 48 is supported throughout the specification and specifically at page 13 line 38 to page 14 line 10 which describes automated devices for forming arrays including a dispenser to moving from region to region and depositing only as much monomer as necessary and a robotic system to control positioning of the dispenser with respect to the substrate. Further support is found at page 25 line 8 to page 28 line 16 which describes locating a dispenser containing a solution comprising a compound a distance away from a surface of a support; dispensing a droplet of 5 nanoliters or less from the dispenser (page 28 lines 13-14) and a robotic positioning system guided by reference marks (page 26 line 42 to page 27 line 12). Support for the dependent claims is provided at least at the citations to follow:

<u>Claim</u>	<u>Subject Matter</u>	<u>Citation</u>
49.	Polymer is dissolved in the solution	p. 14 l. 3
50.	Polymer is in the form of a pellet	p. 30 l. 9
51.	Contacting the dispenser to the surface of the support	p. 27 l. 23
52.	Cover plate	P. 34 l. 19
53.	Distance away is between about 5 microns and about 50 microns	p. 27 l. 16

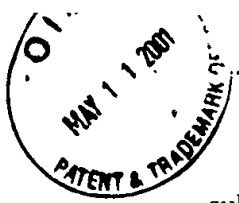
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54. Distance away is about 10 microns p. 27 l. 18
55. Droplet fits within a region having a diameter of less than about 300 microns p. 28 l. 13-14
56. Polymer comprises a monomer p. 4 l. 2-7
57. Monomer comprises a nucleotide or an amino acid p. 6 l. 33 top.7  
l. 31
58. Polymer comprises a nucleic acid, oligonucleotide, polynucleotide, peptide, polypeptide, presynthesized polymer, polyurethane, polyester, polycarbonate, polyurea, polyamide, polyethyleneimine, polyacetate, receptor, enzyme, antibody, catalytic polypeptide, hormone receptor, or opiate receptor p. 6 l. 2 to p. 9  
l. 16; p.4 l.5-7.
59. Polymer comprises at least 2 monomers p. 24 l. 23-26
60. Polymer comprises greater than 100 monomers p. 24 l. 23-26
61. Polymer comprises 2, 3, 4, 5, 6, 10, 15, 20, 30, 40, 50, 75, or 100 monomers p. 24 l. 23-26
62. Support is selected from the group consisting of substantially flat substrates, substrates having raised or depressed regions, beads, gels, sheets, particles, strands, precipitates, spheres, containers, capillaries, pads, slices, films, plates, and slides p. 9 l. 18-28;  
p. 14 l. 15-26.
63. Support comprises a gel. p. 9 l. 18-28;  
p. 14 l. 15-26.
64. Support comprises biological materials, nonbiological materials, organic materials or inorganic materials p. 14 l. 15-16
65. Support is a disc, square, or circle p. 14 l. 20
66. Localized area is smaller than  $1\text{mm}^2$  p. 10 l. 1-14
67. Localized area is smaller than  $0.5\text{mm}^2$  p. 10 l. 1-14
68. Localized area is smaller than  $10,000\text{ }\mu\text{m}^2$  p. 10 l. 1-14
69. Localized area is smaller than  $100\text{ }\mu\text{m}^2$  p. 10 l. 1-14
70. Polymers are at least 5% pure in their respective localized areas p. 10 l. 16-31
71. Polymers are at least between about 10% and about 20% pure in their respective localized areas p. 10 l. 16-31
72. Polymers are at least between about 80% and about 90% pure in their respective localized areas p. 10 l. 16-31
73. Polymers are at least greater than about 95% pure in their respective localized areas

74. Array of at least 100 different polymers at different localized areas is formed p. 10 l. 16-31  
p. 24 l. 19-26
75. Array of at least 1000 different polymers at different localized areas is formed p. 24 l. 19-26
76. Array of at least 10,000 different polymers at different localized areas is formed p. 24 l. 19-26
77. Array of at least 100,000 different polymers at different localized areas is formed p. 24 l. 19-26
78. Array of at least 1,000,000 different polymers at different localized areas is formed p. 24 l. 19-26
79. Array of at least 1000 different polymers occupying localized areas within 1 cm<sup>2</sup> of the surface of the support.
80. Support comprises glass, derivatized glass, pyrex, quartz, a polymeric material, polystyrene, polycarbonate, silicon or a gel. p. 25 l. 33-35  
p. 20 l. 16-20  
p. 38 l. 40-42  
p. 9 l. 18-28;  
p. 14 l. 15-26.
81. Solution of the polymer comprises an aqueous solution p. 4 l. 17-18
82. Dispenser comprises a plurality of dispensing units, wherein the plurality of dispensing units is in fluid communication with a solution comprising a compound and wherein step(b) comprises dispensing a droplet of 5 nl or less from one or more of the plurality of dispensing units. p. 14 l. 7-10  
Figure 12
83. Support bears at least two reference points for positioning the dispenser over at least one of said localized areas for release of said droplet. p. 25 l. 36-42
84. Reference points comprise global reference points for positioning the dispenser over a local region of the surface of the support, and local reference points within the local region for positioning the dispenser over a localized area within the local region.
85. Dispenser further comprises a camera for identifying the reference points p. 26 l. 9-27  
p. 26 l. 28-34
86. Sensing changes in capacitance to identify the reference points p. 26 l. 34-41

87.	Sensing changes in light intensity to identify the reference points	p. 26 l. 34-41
88.	Sensing changes in resistivity to identify the reference points	p. 26 l. 34-41
89.	Sensing changes in optical properties to identify the reference points	p. 26 l. 34-41
90.	Sensing changes in magnetic properties to identify the reference points	p. 26 l. 34-41
91.	Plurality of dispensing units comprises a manifold of delivery lines	p. 14 l. 8-10 Figure 12
92.	Plurality of dispensing units comprises an array of pipettes	p. 14 l. 8-10 Figure 12
93.	Plurality of dispensing units comprises a series of tubes	p. 14 l. 8-10 Figure 12
94.	Plurality of dispensing units includes control valves	p. 23 l. 14-15
95.	Polymer is bound indirectly to the surface of the support via a linker molecule	p. 14 l. 34-39
96.	Dispenser is moved relative to the support	p. 14 l. 3-5
97.	Support is moved relative to the dispenser	p. 24 l. 9-11
98.	One or more localized areas are spaced less than about 3 mm apart	p. 25 l. 24-26
99.	One or more localized areas are spaced less than between about 5 microns and 100 microns apart	p. 25 l. 24-26
100.	One or more localized areas has an angular relation between each localized area of about 1 degree	p. 25 l. 27-29
101.	One or more localized areas has an angular relation between each localized area of about 0.1 degree	p. 25 l. 27-29
102.	Support comprises at least about 100 localized areas	p. 25 l. 29-31
103.	Support comprises at least about 1000 localized areas	p. 25 l. 29-31
104.	Support comprises at least about 10,000 localized areas	p. 25 l. 29-31
105.	Support comprises at least about 1000 localized areas per cm <sup>2</sup> of surface of substrate	p. 25 l. 33-35
106.	Support comprises at least about 10,000 localized areas per cm <sup>2</sup> of surface of substrate	p. 25 l. 33-35
107.	Support comprises a strand including one or more of glass, derivatized glass, quartz or a polymeric material	p. 20 l. 16-20 p. 38 l. 40-42 p. 9 l. 18-28 p. 14 l. 15-26
108.	Dispenser comprises a dispenser tip and a sheath encircling the dispenser tip and rigidly extending a fixed distance beyond the dispenser tip	p. 27 l. 29-36
109.	Surface of the support comprises a hydrophilic or hydrophobic	




	substance	p. 13 l. 30-32
110.	Surface of the support comprises a photoresist	p. 19 l. 32-35
111.	Surface of the support is pretreated	p. 20 l. 44-45
112.	Dispenser comprises a pipette	p. 14 l. 5-10
113.	Dispenser comprises a capillary tube	p. 28 l. 14
114.	Dispenser comprises an electrophoretic pump	p. 29 l. 1-16
115.	Dispenser comprises an osmotic pump	p. 29 l. 41 to p. 30 l. 6
116.	Dispenser comprises a cell sorter	p. 29 l. 41 to p. 30 l. 6
117.	Common frame of reference	p. 25 l. 37
118.	Translational mechanism	p. 26 l. 42 to p. 27 l. 12
119.	Rate of 3 to 10 stops per second	p. 27 l. 3.
120.	Accuracy within 1 $\mu$ m	p. 27 l. 4.
121.	Closed loop feedback	p. 27 lines 5-12.
122.	Insignificant backlash	p. 27 lines 5-12.
123.	Electro-mechanical mechanism	p. 27 lines 5-12.
124.	Greater than 1 $\mu$ m repeatability	p. 27 lines 5-12.
125.	Repeatedly dispense droplets	p. 28 lines 13-14
126.	Laser for locating reference point	p. 26 l. 36.

Claims 127 through 151 include subject matter the support for which is already provided above. Applicants respectfully request entry and consideration of the amendments and newly submitted claims.

Respectfully submitted,

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